# Marked example 3

Paper 2 style · Graphic display calculator

## 3 5 marks SL 2.2 · 2.5 ●●○ Typical

Let $f(x) = x^3 + 2x$ and $g(x) = \sqrt{x+1}$, for $x \geq -1$.

**(a)** Find $f^{-1}(10)$. **[2]**

**(b)** Find $(g \circ f)(1.5)$. **[2]**

**(c)** The point $(1, 3)$ lies on the graph of $f$. Write down the coordinates of the corresponding point on the graph of $f^{-1}$. **[1]**

**MARKSCHEME (a)**

$x^3 + 2x = 10$ **(M1)**

$1.85 \ \ (1.84741\ldots)$ **A1**

**Total 2 marks**

**MARKSCHEME (b)**

$f(1.5) = 6.375$ **(A1)**

$\sqrt{7.375} = 2.72 \ \ (2.71569\ldots)$ **A1**

**Total 2 marks**

**MARKSCHEME (c)**

$(3, 1)$ **A1**

**Total 1 mark**

**Note** The reflection in $y = x$ exchanges the coordinates.



Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software. Not affiliated with or endorsed by the International Baccalaureate Organization. © 2026 Hence